

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

194. (New) A method of producing a heteromeric taste receptor that responds to umami taste stimuli comprising:

expressing at least one T1R1 nucleic acid sequence and at least one T1R3 nucleic acid sequence in a recombinant host cell under conditions which result in a heteromeric taste receptor comprising at least one T1R1 and T1R3 polypeptide that is activated by umami taste stimuli.

195. (New) The method of claim 194, wherein said T1R1 polypeptide is selected from the group consisting rat T1R1, mouse T1R1 and human T1R1 and said T1R3 is selected from the group consisting of rat T1R3, mouse T1R3 and human T1R3.

196. (New) The method of claim 195, wherein said T1R1 and T1R3 are of the same species origin.

197. (New) The method of claim 195, wherein said T1R1 and T1R3 are of different species origin.

198. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide having the amino acid sequence contained in SEQ. ID. NO: 5.

199. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 90% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

200. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 95% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

201. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 96% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

202. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 97% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

203. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

204. (New) The method of claim 194, wherein said T1R1 is a human T1R1 polypeptide that exhibits at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

205. (New) The method of claim 194, wherein said T1R1 is encoded by the nucleic acid sequence contained SEQ. ID. NO: 8.

206. (New) The method of claim 194, wherein said T1R1 is encoded by a nucleic acid sequence that hybridizes under stringent hybridization conditions to the nucleic acid sequence contained in SEQ. ID. NO: 8, or a fragment thereof that when expressed in association with a T1R3 polypeptide yields a T1R1/T1R3 receptor that binds and/or is activated by umami taste stimuli.

207. (New) The method of claim 194, wherein said T1R1 comprises a fragment of the human T1R1 polypeptide contained in SEQ. ID. NO: 5 that when expressed in association with a T1R3 polypeptide results in a heteromeric taste receptor that binds and/or is activated by umami taste stimuli.

208. (New) The method of claim 194, wherein said T1R3 is a human T1R3 polypeptide having the amino acid sequence contained in SEQ. ID. NO: 7.

209. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 90% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

210. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 95% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

211. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 960% Sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

212. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 97% Sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

213. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 98% sequence identity to the polypeptide contained in SEQ. ID. NO: 5.

214. (New) The method of claim 194, wherein said T1R3 polypeptide is a human T1R3 polypeptide that possesses at least 99% sequence identity to the polypeptide contained in SEQ. ID. NO: 7.

215. (New) The method of claim 194, wherein said T1R3 is a rat T1R3 polypeptide having the sequence contained in SEQ. ID. NO: 4.

216. (New) The method of claim 194, wherein the T1R3 polypeptide is encoded by a nucleic acid sequence contained in SEQ. ID. NO: 9.

217. (New) The method of claim 193, wherein said T1R3 polypeptide is encoded by a nucleic acid sequence that hybridizes to the nucleic acid sequence contained in SEQ. ID. NO: 9 under stringent hybridization condition or a fragment thereof that encodes a T1R3 polypeptide that when expressed in association with a T1R1 polypeptide yields a heteromeric taste receptor that responds to umami taste stimuli.

218. (New) The method of claim 194, wherein said T1R1 and said T1R3 nucleic acid sequences are each operably linked to a constitutive promoter.

219. (New) The method of claim 194, wherein, said T1R1 and said T1R3 nucleic acid sequences are each operably linked an inducible promoter.

220. (New) The method of claim 194, wherein said T1R1 and T1R3 nucleic acid sequences are expressed in a prokaryotic cell.

221. (New) The method of claim 194, wherein said T1R1 and T1R3 nucleic acid sequences are expressed in a eukaryotic cell.

222. (New) The method of claim 221, wherein said cell is a mammalian, yeast, insect or amphibian cell.

223. (New) The method of claim 221, wherein said cell is a HEK-293 cell, COS cell, CHO cell, or Xenopus oocyte.

224. (New) The method of claim 223, wherein the cell is a HEK-293 cell.

225. (New) The method of claim 194, wherein said cell expresses a G protein.

226. (New) The method of claim 225, wherein said G protein is a promiscuous G protein.

227. (New) The method of claim 225, wherein said G protein is $G_{\alpha 15}$ and $G_{\alpha 16}$ or gustducin.

228. (New) The method of claim 194, wherein said T1R1 and T1R3 polypeptides are expressed on the surface of said cell.

229. (New) The method of claim 194, wherein either of said T1R1 and T1R3 nucleic acid sequences are attached to a nucleic acid sequence that encodes a detectable label.

230. (New) The method of claims 194, wherein said cell stably expresses said T1R1 and T1R3 nucleic acid sequences.

231. (New) The method of claim 194, wherein said cell transiently expresses said T1R1 and T1R3 nucleic acid sequences.

232. (New) The method of the claim 230, wherein said T1R1 sequence comprises the amino acid contained in SEQ. ID. NO: 5 and said T1R3 sequence comprises the amino acid sequence contained in SEQ. ID NO: 7.

233. (New) The method of claim 232 wherein said cell further stably expresses $G_{\alpha 15}$, $G_{\alpha 16}$ or gustducin.